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Validation and typification of *Gyroporus purpurinus*

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Abstract — *Gyroporus purpurinus* is a fairly well known eastern North American bolete that has never been validly published. It is validated and typified here.

Key words — *Boletales*, nomenclature

Introduction

Gyroporus purpurinus is a small bolete in the *Sclerodermatineae* distributed throughout the eastern United States and adjacent Mexico and Canada. Though well depicted on the Internet (Kuo 2003) and in popular field guides (Lincoff 1981, Phillips 1991, Bessette et al. 2000), the taxon has never been validly published.

As noted by Both (1993), Snell (1936), who first documented the fungus as "*Boletus castaneus* f. *purpurinus*," did not provide a Latin description or designate a type. This did not constitute valid publication, since a Latin description was required from 1935 to 2011 (McNeill et al. 2012: Art. 39.1). Singer (1945), who elevated the form to species level, combined it into *Gyroporus*, assuming Snell's "f. nov." to be valid. Thus, Singer's combination was also invalid. Smith & Thiers (1971) incorrectly implied that a 1915 collection by Kauffman that was sent to Snell (almost certainly BPI 782366) was the holotype, assuming a collection in their possession was an isotype (presumably MICH 4998). The University of Michigan Fungus Collection Database indicates that MICH 4998 is a syntype (quod.lib.umich.edu/f/fung1ic/ – accessed April 17th, 2013), but this is not possible because Snell (1936) did not reference any collections. Confusingly, the box of BPI 782371 is marked with a printed label that reads "TYPE" (nt.ars-grin.gov/fungaldatabases/ – accessed April 17th, 2013). It is unclear whether this was marked by Snell or someone else.

Nevertheless, the taxon constitutes a discrete species. *Gyroporus purpurinus* is validated and typified here.

Materials & methods

Dried specimens were examined macroscopically with an AO Spencer stereomicroscope and microscopically with an Olympus BH-2 microscope. Dissections for microscopic study were prepared on slides with either water or 3% potassium hydroxide. In the description of spores, Q is the mean length/width quotient. The description of the taxon was drawn from previous descriptions in relevant literature (Snell 1936, Singer 1945, Bessette et al. 2000), aspects of which were modified based on study of specimens cited here. The color terms "reddish-purplish" and "vinaceous red to burgundy" are taken from Snell (1936) and Bessette et al. (2000), respectively.

Taxonomy

Gyroporus purpurinus Singer ex Davoodian & Halling, **sp. nov.**

MycoBank 804040

"*Boletus castaneus* f. *purpurinus*" Snell, Mycologia 28: 465 (1936), nom. inval. (no Latin description).

"*Gyroporus purpurinus*" Singer, Farlowia 2: 236 (1945), nom. inval. (no Latin description).

Distinguished from other members of *Gyroporus* by its distinct reddish-purplish pileus and stipe surfaces and the relative rarity of clamp connections.

Type: United States, New York, Glens Falls Watershed, near Lake George, 24 Aug 1932, col. W. H. Snell (**holotype**, BPI 782371).

Pileus 1–9 cm, convex to plane with even margin, somewhat velutinate to subtomentose, sometimes slightly rimose to finely areolate in age, "reddish-purplish"/"vinaceous red to burgundy"/various intergrading shades of purple and red. Hymenophore adnexed to free, white then becoming yellow with maturity, unchanging on injury or exposure; pores 1–4 per mm, tube depth 5–8 mm. Stipe 3–6 cm long, 2.5–10 mm thick, equal or tapering upward, often hollowing in age, somewhat velutinate, exhibiting colors within the same range of the pileus, lacking an annular zone. Context white, unchanging upon exposure or injury. Spore print bright yellow.

Spores 8–11(–12) × (4–)4.8–7 µm, Q = 1.8, nearly ovoid to ellipsoid, sometimes appearing subreniform, appearing smooth, hyaline to yellow, sometimes appearing with a slightly thickened wall, sometimes appearing with hilar appendage. Basidia 21–30 × 8–12.2 µm, 4-spored. Hymenophoral cystidia versiform, 23–50 × 3.3–8 µm. Tube trama divergent. Pileipellis a collapsing trichodermium; terminal cells fusoid-ventricose to ampullaceous, 40–120 × 5–20 µm; pigmentation at times apparent. Stipitipellis hyphae oriented in various directions; pigmentation at times apparent. Clamp connections infrequent to rare.

Distribution: Florida to New England, west to Minnesota and northeast Mexico. Reported from southeast Canada (mycoportal.org/portal/imagelib/ – accessed April 17th, 2013). Phenology: July–October. Presumed mycorrhizal symbionts: *Quercus*, *Pinus*.

OTHER SPECIMENS EXAMINED – UNITED STATES, **MICHIGAN**, Ann Arbor, 15 Aug 1915, col. C. H. Kauffman (BPI 782366). **MASSACHUSETTS**, Conway, Pine Hill Road, 30 Aug 1960, col. H. E. Bigelow with M. E. Bigelow (NY 48358). **GEORGIA**, Athens, University of Georgia Botanical Garden, 25 Aug 1978, col. H. E. Bigelow given to R. E. Halling (NY 48357). **NORTH CAROLINA**, Swain Co., Great Smokey Mountains National Park, Indian Creek, 1 Aug 1992, col. R. E. Halling (NY 48356).

COMMENTS – For illustrations of microscopic features see Singer (1945) and Smith & Thiers (1971).

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Literature cited

Bessette AE, Roody WC, Bessette AR. 2000. North American boletes. Syracuse University Press, Syracuse.

Both EE. 1993. The boletes of North America: a compendium. Buffalo Museum of Science, Buffalo.

Kuo M. *Gyroporus purpurinus.* Retrieved from mushroomexpert.com web site June 7th, 2012: http://www.mushroomexpert.com/gyroporus_purpurinus.html

Lincoff GH. 1981. National Audubon Society field guide to North American mushrooms. Alfred A. Knopf, New York.

McNeill J, Barrie FR, Buck WR, Demoulin V, Greuter W, Hawksworth DL, Herendeen PS, Knapp S, Marhold K, Prado J, Prud'homme van Reine WF, Smith GF, Wiersema JH, Turland NJ. 2012. International Code of Nomenclature for algae, fungi, and plants (Melbourne Code). Adopted by the Eighteenth International Botanical Congress, Melbourne, Australia, July 2011. Regnum Vegetabile 154.

Phillips R. 1991. Mushrooms of North America. Little, Brown and Company, Boston.

Singer R. 1945. The *Boletineae* of Florida with notes on extralimital species. II. The *Boletaceae* (*Gyroporoideae*). Farlowia 2: 223–303.

Smith AH, Thiers HD. 1971. The boletes of Michigan. University of Michigan Press, Ann Arbor.

Snell WH. 1936. Notes on boletes V. Mycologia 28: 463–475. http://dx.doi.org/10.2307/3754120